



Department
for Education

Analytical associate pool

Summary of projects

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The Analytical Associate Pool

Introduction

The Department for Education (DfE) uses high quality evidence and analysis to inform policy development and delivery to achieve our vision - to provide world-class education and care that allows every child and young person to reach his or her potential, regardless of background.

Within the DfE there is an analytical community which comprises statisticians, economists, social and operational researchers. These specialists feed in analysis and research to strategy, policy development and delivery.

While much analysis is undertaken in-house, and substantial projects are commissioned to external organisations, there is often a need to quickly commission small-scale projects.

We have therefore created a pool of Analytical Associates who can bring specific specialist expertise, knowledge and skills into the department to supplement and develop our internal analytical capability.

In June 2014 we invited applications from individuals to join the pool. We received an overwhelming response and, after evaluating the expertise of everyone who applied, we established the Analytical Associate Pool.

Over 160 independent academics and researchers are in the pool, and they can be commissioned to carry out small-scale data analysis, rapid literature reviews, primary research and peer review. They also provide training, quality assurance and expert advice on an ad-hoc basis. Most projects cost less than £15,000, and more than 50 projects have been commissioned since the pool opened in September 2014.

In 2016 we will open the pool to for new Associates to join. Further details will appear on The DfE [internet research page](#).

Summary of projects

At DfE we aim to make analysis publicly available and we follow the Government Social Research (GSR) [protocol](#) for publishing research. Much of the analysis undertaken through the Associate Pool is too small-scale to be published on its own, and this report summarises these smaller pieces of analysis. More substantial work is published in stand-alone reports throughout the year. See page 14 for details and links to projects already published.

A summary of childcare policy evaluations and research

Associate: Clarissa White, Ivana LaValle and Sylvia Potter

This is a review of early education and childcare policy research and evaluation covering interventions across the following government departments: DfE, DWP and HMRC¹. For each policy, the summary includes:

- A very brief description of the policy
- Dates the policy ran from and to (if ended)
- A precis of the headline findings of any evaluation and a link to the report
- An indication if the policy has featured in the wider research literature and, if so, a summary of the headline findings and a link to the research

Key findings

This research consists of two outputs intended for internal reference purposes within DfE:

- A policy map to provide a summary of how the policy and evidence fit together under each theme (e.g supply, take up and outcomes) and references for the reports summarised.
- The full detailed evidence framework in Excel file format.

The review includes details and summaries for 69 childcare studies. Some example findings from a few key sources are provided below by theme.

- **Supply:** There has been a dramatic transformation of the childcare market in England over the past decade. The number and profile of full day care providers and staff working in these settings has increased substantially since 2001. (Childcare and Early Years Provider survey 2013)
- **Workforce:** A key evaluation showed that the use of specialised early years graduate training pathways can lead to improvements in quality. Settings which gained an Early Years Professional made significant improvements in quality over those that did not. (Graduate Leader Fund Evaluation, 2011)
- **Demand:** 64% of families (3,432,000 families) used some kind of formal provision (nursery school, nursery class, reception, day nursery, play group, out of school club, childminder). (Childcare and Early Years Survey of Parents, 2013)
- **Outcomes:** A key longitudinal evaluation (EPPSE) has consistently found significant positive effects for pre-school experiences on child outcomes up to the end of primary school and into secondary school. (Effective Pre-school, Primary and Secondary Education, 2014)

¹ Department for Education, Department for Work and Pensions, HM Revenue and Customs

A summary of evidence on the relationship between maternal employment and childcare costs

Associate: Dr Lynne Graham-Matheson, Canterbury Christ Church University

This rapid evidence review aimed to identify:

- the best and most up-to-date estimates of the elasticity of maternal employment with respect to childcare cost;
- Relevant research on the relationship between use of childcare and cost, availability, accessibility and flexibility.

Key findings

There are relatively few UK-based quantitative studies on the relationship between maternal employment and childcare costs. Each uses different data, techniques and definitions of mothers/children; but in general suggest that there is a small, negative relationship between childcare costs and maternal employment decisions. The most recent UK study is by the Institute for Fiscal Studies (2014), which finds that the expansion of the free entitlement during the 2000s increased employment amongst mothers whose youngest child is 3 years old by 3 percentage points. Viitanen (2005) uses UK data to calculate an elasticity estimate of -0.138, indicating that 10 per cent decrease in the price of formal care would lead to a 1.4 per cent increase in the labour force participation rate of mothers of pre-school-age children. In another UK-based study of lone mothers, Jenkins and Symons (2001) calculate a comparable elasticity estimate of -0.09.

The review also covers international literature. For example, a 2007 Australian study found that childcare costs have an impact on the working pattern of married mothers with pre-school, calculating elasticities of -0.4 for part-time work and -0.93 for full-time work.

Relevant qualitative studies were also reviewed, looking at barriers to work for mothers of young children and reasons for wanting to work (financial and otherwise).

The evidence from this review has been used to inform assumptions about the labour market impact of the extension to 30 hours of free childcare for 3&4 year old children of working parents.

The policy map and evidence framework bring together comprehensive early years policy evidence into two accessible documents. This has allowed DfE civil servants to quickly review key findings from past studies, informing policy thinking and identifying evidence gaps e.g. the need to research how early years pupil premium is being used by childcare providers to support the development of disadvantaged children.

Cost of apprenticeships

Associate: Dorothy Berry Lound, HOST Policy Research

This review was commissioned by DfE and BIS to get a better understanding of the unit costs of different types of apprenticeships through collecting international comparative data.

The project involved desk research, email exchanges and telephone interviews with experts in selected countries (Australia, Denmark, France, Germany, the Netherlands and Scotland). It examined the occupations of construction – carpentry, joinery and bricklaying; automotive engineering; retail shop assistants; adult social care; and IT system support specialist.

This was a time-limited piece of work which relied heavily on existing published sources in English language. It was not intended to be a thorough systematic review of the literature.

Key findings

How much do apprenticeships cost in other countries?

- Comprehensive information on the funding of apprenticeships was uncovered but the data collected varies considerably from country to country making direct cost comparisons impossible. It is not possible to obtain directly comparable cost figures for each country, nor, in some cases, figures for the same year. With the exception of Germany, there is little systematic analysis of costs to employers across a range of occupations.
- The average net cost of an apprenticeship to employers (of apprentices) in Germany is £3,830 per trainee per year (2012/13) compared to £5,964 per trainee per year in the Netherlands.

How much do training courses which are broadly comparable to apprenticeships cost in England?

- It was very difficult to establish comparative costs of training courses that are broadly comparable to the apprenticeships in England, because the data is not available.

Who pays for what and how does the money flow around the system?

- In Australia, the government finances support and guidance services specifically geared to apprenticeships; in Denmark, the government finances the vocational school-based education element of apprenticeships; in France, apprentices are co-funded by the state and employers through the apprenticeship tax; in Germany, the state finances the vocational education schools which provide off the job training; in the Netherlands, the apprenticeship system is mainly funded by the

government and the employers that train apprentices. In Scotland, the government provides Skills Development Scotland with funding each year for Modern Apprenticeships.

- Levies are used to fund apprenticeships in some countries (Australia and the Netherlands).
- In most of the countries studied, apprentices do not contribute to their training, with the exception of the Netherlands, where apprentices aged over 18 and above have to pay a variable course fee.

The findings from the study are being used to help policy development across DfE and BIS on apprenticeship growth and on post-16 reforms. In addition, the evidence about the use of levy payments internationally will inform the development of the apprenticeship levy policy, alongside the official Levy Consultation.

Does the extent to which teachers are ‘trailing spouses’ vary by region?

Associate: Dave Thomson, Education DataLab

This project examined the extent to which teachers in London are working in the region and constrained from moving out because their partner has a job which is dependent on location in the region.

It analysed data from the Labour Force Survey (LFS) to examine the characteristics of teachers and their partners and drew on data from the School Workforce Census (SWC) published by the Department of Education.

Key findings

There are regional differences in the pay gap between teachers and their partners. Within England, teachers tend to be paid less than their partners in London and the South East while teachers tend to earn more than their partners in the North West and North East.

The pay gap between teachers and their partners in London could be interpreted as showing that a high proportion of teachers are working in the region as a result of their partner's careers. The regional pattern suggests, however, that pay gaps between teachers and their partners simply reflect the overall state of the regional labour market with teachers earning less than partners in regions with more buoyant labour markets but earning more than their partners in those with lower levels of labour demand.

Using data on regional differences in the cost of housing the researchers identify one group (partners in the top quartile of the wage distribution) for whom the fall in their partner's salary if they moved out of London would not be offset by the lower housing costs outside of London. This may constrain this group of teachers to working in the capital.

A higher proportion of partners are employed in business services in London in comparison to remaining regions. Knowledge intensive business are characteristic of global cities such as London and the higher proportion of partners working in these industries in London supports the conclusion that a significant proportion of teachers may be constrained from leaving London due to their partner's job.

Teachers in Inner London are distinctive in being younger and more likely to have a partner with a degree level qualification than those in remaining regions. The characteristics of teachers and their partners in London are broadly comparable to the overall characteristics of the population in London, however, suggesting that there is little about these patterns that are specific to teachers.

Does having a sixth form make schools think about A levels earlier on?

Associate: Simon Rutt, NfER

This project examined whether schools that have a sixth form approach their teaching programmes with A Levels as the main target rather than GCSEs, through analysis of the National Pupil Database (NPD).

Analysis of the value added by schools usually examines progress from Key Stage 2 (KS2) to Key Stage 4 (KS4). It was hypothesised that this value added model does not identify all the value added by schools with a sixth form as the latter focus more on Key Stage 5 (KS5) outcomes.

The researchers tested different models using KS4 and KS5 data. Analysis was undertaken on state maintained schools only, and on pupils with KS5 outcomes.

Key findings

Pupils at selective schools had, on average, higher value added scores between KS2 and KS4 than pupils at non-selective schools with a sixth form, who in turn had higher scores than pupils at sixth form (SF) and further education (FE) colleges. The majority of pupils in SF and FE colleges would have come from schools that did not have a sixth form.

Value added between KS2 and KS4 was positively correlated with value added between KS2 and KS5.

Pupils at selective schools had, on average, higher value added between KS2 and KS5 than pupils at non-selective schools with a sixth form, as well as pupils at SF and FE colleges. This was true for academic and overall KS5 average point score, and for all pupils as well as those with higher attainment at KS2.

Restricting the analysis to pupils who achieved Level 5+ at KS2 shows a similar pattern of results, with selective school pupils showing higher value added than pupils at non-selective schools with a sixth form, who in turn have higher value added than pupils at SF and FE colleges

Impact assessment of the NLE deployment fund

Associate: Daniel Mujs

The National Leader of Education (NLE) deployment fund was distributed by NCTL² as grant funding for system leaders (teaching schools, National Leaders of Education or Local Leaders of Education) to support underperforming schools to improve. This analysis aimed to assess impact on pupil outcomes in the 2011/12 and 2012/13 rounds

Propensity score matching was used to generate a group of comparator schools for both the supporting system leaders and the supported schools. Analysis used attainment at KS2 and KS4, and also investigated the attainment gap between advantaged and disadvantaged pupils.

Key findings

Overall, the findings suggest a positive impact of NLE deployment funded support on headline pupil outcomes in supported schools when compared with a group of similar schools at both KS2 and KS4. No impact was identified for the supporting schools (the system leaders).

At KS2, in supported schools, there was a significant positive relationship between NLE deployment and both average point scores and percentage achieving level 4 or above in reading, writing and maths for the 2012/13 cohort (although not the 2011/12 cohort). The relationship explained about 10% of variance in the model. Pupil background school level variables included accounted for between 40% and 50%. In the 2012/13 cohort there is also evidence to suggest that deployment was associated with a reduction in attainment gap between advantaged and disadvantaged. But this relationship was weak.

At KS4, for supported schools, there was a significant positive relationship between NLE deployment and both total points score and percentage of pupils achieving 5 A* to C including English and Maths for both cohorts. As with KS2, the relationship explained about 10% of variation in attainment change. In the supported schools there was again statistically significant, though weak, evidence that the gap in attainment between disadvantaged and other pupils reduced following deployment.

In both cohorts, the significant differences emerge from 2013.

The findings from this analysis will help inform future plans for the role and expansion of the NLE programme in relation to the wider school improvement strategy.

² National College for Teaching and Leadership

Relationship between attainment and school condition

Associate: Education Datalab (Dave Thomson)

This study uses data from the Property Data Survey matched to a range of information concerning pupils and schools to analyse the association between school condition and outcomes at both the school and pupil level.

Key findings

There is evidence of a link between the condition on school buildings and pupil outcomes, but it is relatively weak compared to other school and pupil characteristics.

Further work could use time series data on school condition and evidence of specific investment to examine the effect of school condition on outcomes.

The evidence forms part of our ongoing capital evidence base. The recommendations will be used to shape further investigation.

Re-thinking support for adolescents on the edge of care in Enfield – developing an evaluation plan.

Associate: John Rodgers, York Consulting LLP

This project involved diagnostic support and advice on evaluation of Enfield's Innovation Programme proposal.

Key findings

This project generated an evaluation plan for the London Borough of Enfield's proposed change to the way social work is organised and delivered for children and adolescents to support its application to the Innovation Programme.

The plan formed part of the evidence on which the Innovation Programme Investment Board decided to support Enfield's proposal. It has formed the basis of the actual evaluation of the project currently underway.

School workforce planning: a qualitative study of initial teacher training (ITT) providers

Associate: Sean McMahon, Oxford Analytics

This was a small exploratory project. It aimed to better understand the processes that school-led initial teacher training partnerships go through when undertaking workforce planning at a local level; what strategic planning occurs to establish and validate future needs and ITT place requirements; how workforce planning is supported in hard-to-reach areas and to address shortage subjects; and what the Department could do to support more effective workforce planning.

20 face-to-face qualitative research interviews were undertaken during February and March 2015 in 12 ITT partnerships spread across the English regions. The partnerships selected varied by size, delivery model, maturity (length of time as a partnership), area characteristics (urban/rural/coastal), and phase (primary/secondary).

This was a small qualitative study, therefore the findings cannot be generalised to the whole sector.

Key findings

Partnerships were assessing local need through dialogue, collating local school requirements and reviewing recurrent need in shortage subject areas. They were not conducting desk based data analysis, modelling or attempting longer term forecasting of need. They were not confident that they could predict when they would need staff, and in what volume, with any degree of certainty. This was due in part to the relatively small size of many schools, the often short-term and unpredictable nature of school staffing changes, and a lack of access to relevant data and capacity to analyse it.

Workforce planning typically involved 'hedging future supply', i.e. using their participation in ITT (and School Direct in particular) to generate and cultivate a high-quality pool of potential candidates, rather than seeking to match predicted demand.

The research suggests that there was a lack of understanding, particularly in schools newly engaged in ITT, on how the ITT allocations system of the current time worked and what was taken into account. Respondents felt there needed to be a greater regional aspect to the national allocations model. For most, this meant greater flexibility within regions to respond better to their specific shortage subject areas and local recruitment issues.

Evidence from the report has provided a better understanding of how ITT providers and schools undertake workforce planning and we will reflect this in future policy development around teacher supply, particularly in supporting schools to address local teacher supply challenges.

Published projects

Many Associate Pool projects have been published as a full report on the [DfE Internet site](#) or on Associate's own websites. See below for more information and links to these publications.

Table 1 Associate Pool Published Reports

| Title | Summary | Date |
|---|--|---------------|
| The earnings and employment returns to A levels | An analysis of the British Cohort Study (BCS70) to better understand the earnings and employment returns to GCE A levels. | February 2015 |
| Workload challenge: analysis of teacher responses | Research looking into teachers' opinions about the main causes of unnecessary workload in schools and their suggested solutions. | February 2015 |
| Pre-school influences on children and young people's outcomes | This summarises the findings on the long term effect of pre-school on children's educational and developmental outcomes throughout compulsory schooling. It draws on the findings from the Effective Pre-school, Primary and Secondary Education Project (EPPSE) | June 2015 |
| Residential care in the English child welfare system | Review of the available research on residential care for looked-after children. | June 2015 |
| Ethnic minorities and attainment: the effects of poverty | Research into the educational attainment of pupils in England by their ethnicity. | June 2015 |
| Cost of school uniform 2015 | Research into how much the cost of school uniforms has changed since 2007. | June 2015 |
| Summary of longitudinal surveys | Summary of current and recent longitudinal surveys relevant to the Department for Education (DfE). | July 2015 |
| Mapping careers provision in schools and colleges in England | Research on what careers provision is available in schools and colleges. | July 2015 |
| Family justice review: the effect on local authorities | Research on the effect of the revised public law outline (PLO) on the practice and processes of 6 local authorities. | August 2015 |
| School Improvement: Effective School | Report looking at the evidence available on collaboration and partnerships between schools | October 2015 |

| Title | Summary | Date |
|--|---|---------------|
| Partnerships | and their effectiveness in improving schools. | |
| Cost of delivering the early education entitlement | A study into how much it costs for childcare providers to manage the free early education entitlement for children aged 2 to 4. | November 2015 |

Further information

If you would like any further information about the Associate Pool or the projects included in this summary please email us on: associate.pool@education.gsi.gov.uk



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